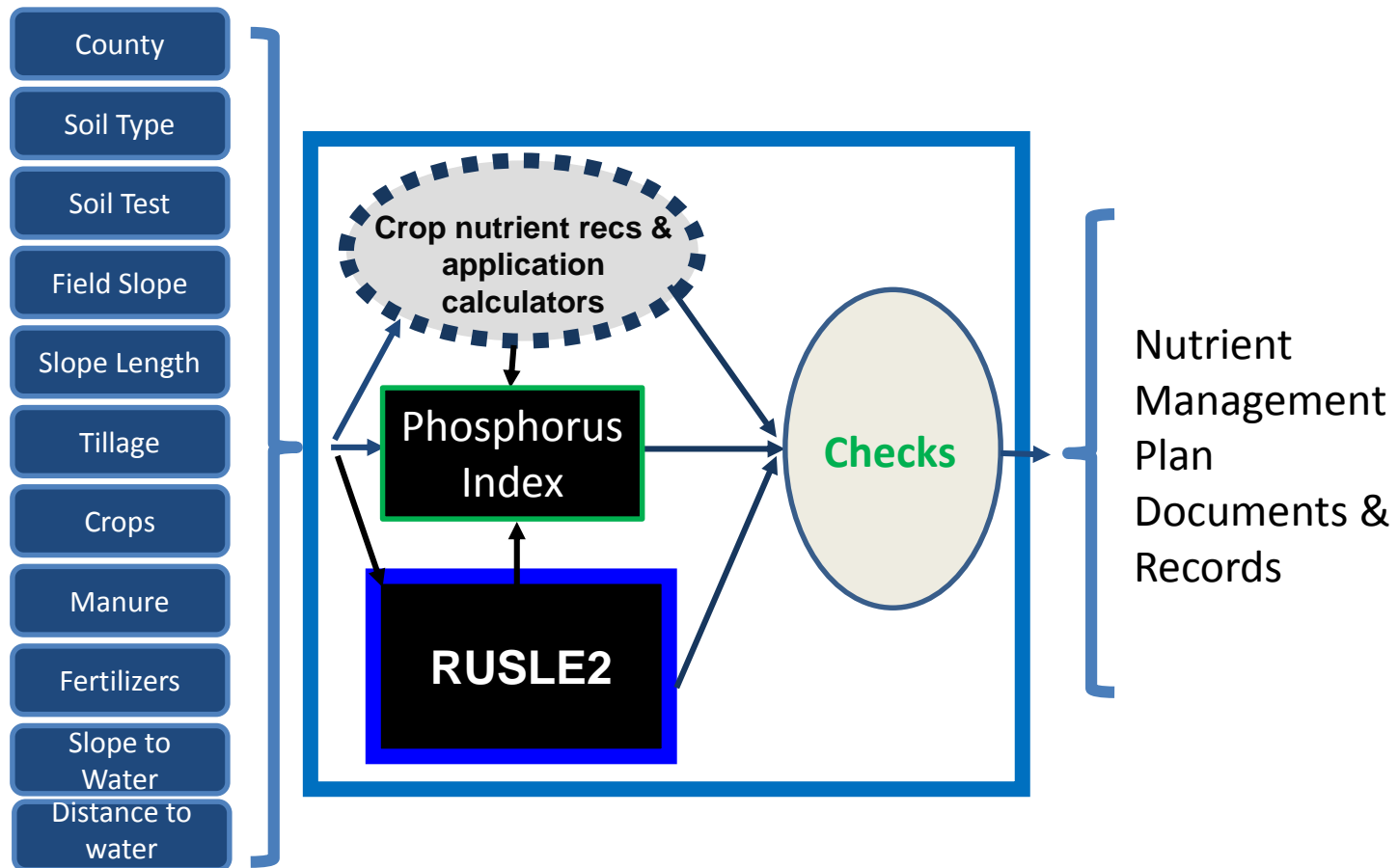




# SnapPlus 14.0 Updates: What's new in the black boxes?





# Soil Loss may be different due to database changes you can't see

Example:

No-till alfalfa seeding



Old versions: Seeded with very heavy no-till drill

14.0: Drill or airseeder, double disk

Change in calculated soil loss for Cs-A-A-A rotation on 9% slope

2.0: 2.1 T/a/yr

14.0: 1.5 T/a/yr



# SnapPlus tillage options standardized

Tillage Name	Description	Fall STIR	Spring STIR, Row	Spring STIR, Drilled	Total STIR, Row	Total STIR, Drilled
Fall chisel, disked	Fall chisel plowing (twisted shovel) with spring disking (tandem, light) and field cultivation before planting.	46	48	52	93	97
Fall chisel, no disk	Fall chisel plowing (twisted shovel) and field cultivation before planting.	46	28	32	74	78
Fall cultivation	One field cultivation before planting, use for systems with one pass in fall and no spring tillage	26	2	6	28	32
Fall moldboard plow	Fall moldboard plowing with spring disking (tandem) and field cultivation before planting.	65	48	52	113	117
Fall vertical tillage	Fall pass plus a spring pass with same seedbed conditioner: double gang coulters caddy, rotary harrow, and rolling basket incorporator.	20	22	26	42	46
No-till	No soil disturbance except for planting	0	2	2 to 6	2	2 to 6
Spring chisel, disked	Spring chisel plowing (twisted shovel) followed by disking (tandem) and field cultivation before planting.	0	93	97	93	97
Spring chisel, no disk	Spring chisel plowing (twisted shovel) and field cultivation before planting.	0	74	78	74	78
Spring cultivation	One field cultivation before planting, use for most one-pass systems.	0	28	32	28	32
Spring moldboard plow	Spring moldboard plowing followed by disking (tandem) and field cultivation before planting.	0	113	117	113	117
Strip-till	No soil disturbance except for 30% of the surface at planting with a strip-till planter.	0	5	NA	5	NA
Spring vertical tillage	Spring pass using a seedbed conditioner with a double gang coulters caddy, rotary harrow, and rolling basket incorporator	0	22	26	22	26



# Use the STIR table to match to closest SnapPlus tillage system

## Soil Tillage Intensity Ratings (STIR) for Soil Disturbing Processes

Operation Name	STIR	Information
Aerator, field surface, ground driven 0 degree offset	7	AerWay tool . Ground driven 8 knife-tines mounted on a rotating shaft pulled across the soil, punch holes and shatter soil sideways as the blades rotate out of the soil. Little inversion or residue burial. 0 degree offset gang angle.
Aerator, field surface, ground driven 10 degree offset	23	AerWay tool . Ground driven 8 knife-tines mounted on a rotating shaft pulled across the soil, punch holes and shatter soil sideways as the blades rotate out of the soil. Moderate inversion and residue burial. 10 degree offset gang angle.
Chisel plow, coulter	53	Coulter chisel plow with coulters and straight points , sweeps ,or twisted points
Chisel plow, coulter with cover disks	56	Coulter chisel plow with straight or twisted points and covering disks.



# How to find the STIR table



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Wisconsin's Nutrient Management Planning Software

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## Matching SnapPlus Tillages

**How do I know what tillage system to choose when mine is not in the drop-down list?**

You can select the most similar SnapPlus system by comparing the STIR values. STIR stands for **Soil Tillage Intensity Rating** and differences between STIR ratings can be used to show differences in the degree of soil disturbance between tillage types. The ratings take into account tillage type, tillage depth, equipment operating speed, and percent of surface area exposed. A STIR value can be calculated for each soil disturbing operation in RUSLE2. STIR values for all the operations are added to get a value for the system. The table below shows the sums of the STIR for each SnapPlus tillage choice in the fall and spring. Note that drilled and row crops have different STIR values for the same tillage because of differences in the soil disturbance in the planting operation.

### Soil Tillage Intensity Ratings for SnapPlus Tillage Choices

Tillage Name	Description	Fall STIR	Spring STIR, Row crops <sup>1</sup>	Spring STIR, Drilled crops	Total annual STIR, Row crops <sup>1</sup>	Total annual STIR, Drilled crops
Fall chisel, disked	Fall chisel plowing (twisted shovel) with spring disking (tandem, light) and field cultivation before planting.	46	48	52	93	97
Fall chisel, no	Fall chisel plowing (twisted shovel) and					



# Manure and anhydrous can now be injected in no-till

**Injection operations automatically applied to  
soil loss calculations**

	STIR
Manure injection	8
Anhydrous knife	3







# Changes you can see



Fall field cultivation added (1 pass in fall)

New crops:

More cover crops



Ex. Corn silage to radish cover crop

More double crops with continuous cover



Ex. Winter rye forage to oatlage-  
alfalfa seeding



# Use the single crop option for late seeded legumes

2015: Winter wheat (grain + straw)  
to Late Direct Seeded Legume  
Forage  
2016: Alfalfa

2015: Winter wheat grain + straw  
2016: Alfalfa Seeding Fall

2015	2016	=	2015	2016
Winter wheat (grain + straw)	Alfalfa		Winter wheat grain + straw	Alfalfa Seeding Fall
81-100	2.6-3.5		81-100	2.6-3.5
Field Cultivation	None		Field Cultivation	Field Cultivation
2014-08-19	2014-08-19		2014-08-19	2014-08-19

Wheat cut July 20, 2015  
Alfalfa planted mid-August  
Alfalfa hay cut three times in 2016





# Soil loss calculations for Transect report made as a sequence

Farm Fields Soil Tests Nutrients Cropping Daily Log Reports

PDF X Save Folder

Nutrient Management Plan  
Farm Management  
Soil Loss  
Soil Conservation  
Annual Soil Loss  
**Transect Survey**  
Water Quality  
Data Dump

1 of 1 Page Width Find Next

## SnapPlus Transect Survey Report

Reported For	Green Co Transect	Prepared for: Green Co Transect attn:Tonya Gratz
Printed	2014-08-20	
Plan Completion/Update Date	2014-07-02	
SnapPlus Version 14.0 built on 2014-08-04		
C:\SnapPlus2Beta\MySnapPlus Data\Green Co Transect.snapDb		

Point Name	Soil Series	Soil Symbol	Slope %	Slope Length ft	Field "T" t/ac	Soil Loss t/ac
01 0	ARENZVILLE	Cn	1	250	5	0.6
01 1	PALSGROVE	PgC2	9	200	4	5.5
02 1	PALSGROVE	PgC2	9	200	4	5.5
03 0	ASHDALE	AsD2	13	150	4	4.9
03 1	ASHDALE	AsD2	13	150	4	2.8
04 1	DOWNES	DoB2	4	200	5	2.2

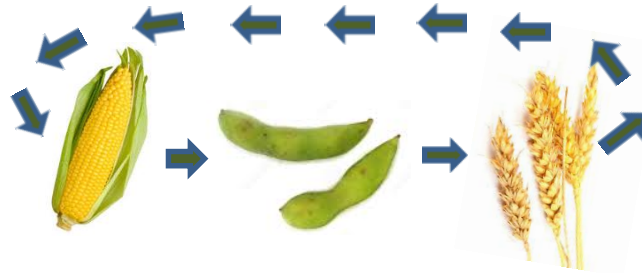


# Soil loss calculation

Kewaunee silt loam, 6% slope, Brown County

All years chisel plowed in fall, field cultivation prior to planting

## Rotation



Annual soil loss T/acre
2.0
1.8
1.5

## vs. Sequence



Annual soil loss T/acre
X
X
1.7
2.1
1.8
1.5

- + Nutrient Management Plan
- + Farm Management
- Soil Loss
  - ... Soil Conservation
  - ... Annual Soil Loss
  - ... Transect Survey
- Water Quality
  - P Trade**
- + Data Dump

# P Trade Report also run as a sequence



P Trade Report				PTP			
Field Name	Soil Series	Soil Symbol	Acres	2017	2018	2019	2020
1	KEWAUNEE	KhB2	25	51	42	36	43
<b>Total</b>			<b>25</b>	<b>51</b>	<b>42</b>	<b>36</b>	<b>43</b>

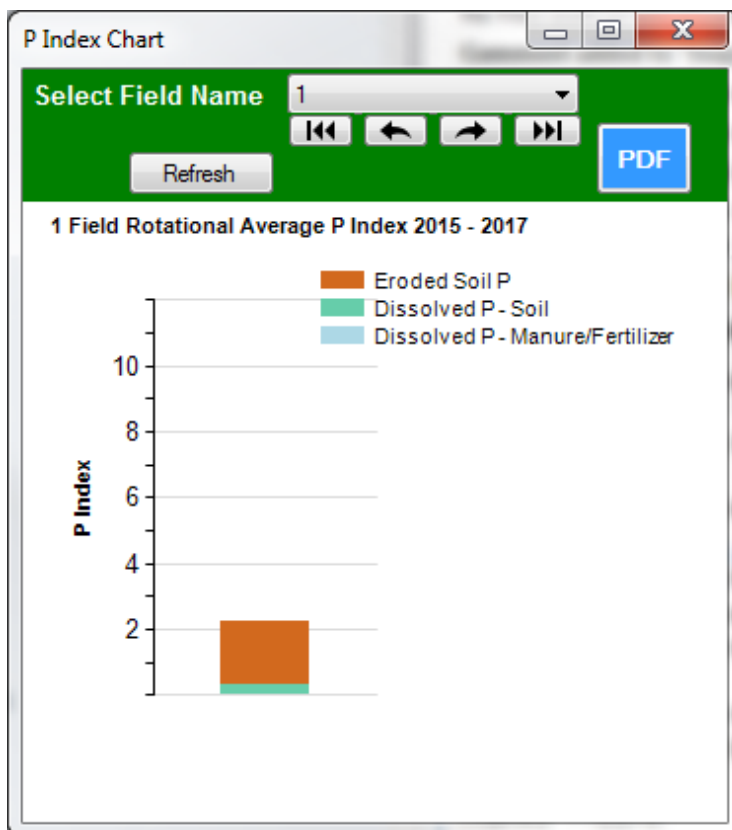
PTP = P loss to water per field = Acres x lb P per acre

Uses P Index equations and Predominant soil

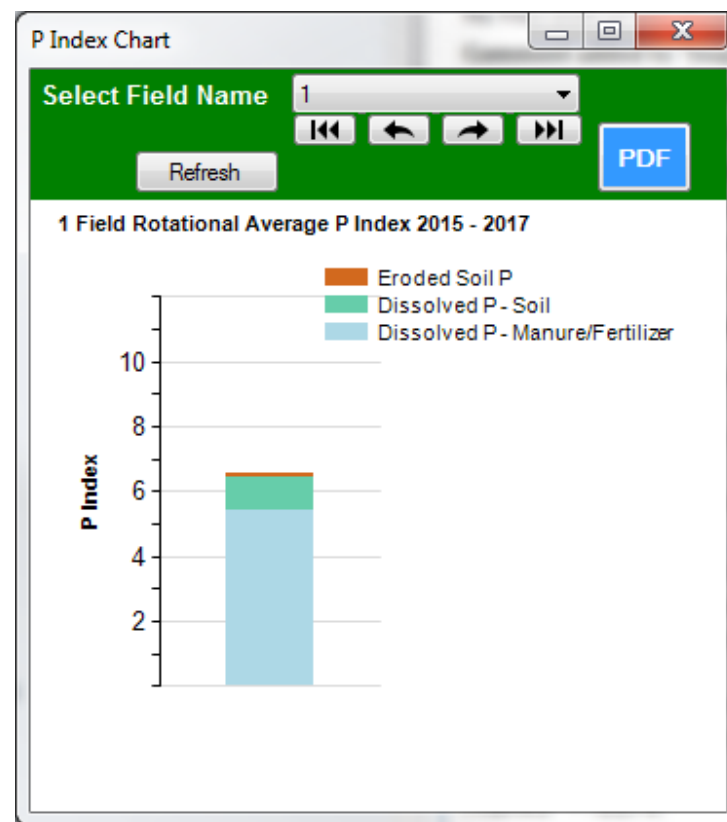


# P Index chart

Tools > P Index Chart



Corn-Soy-Wheat Fall chisel plowed rotation on Kewaunee soil



Same field and rotation, switched to no-till, maximum N as poultry in fall